

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A system for mirroring write operations from a local storage system onto a remote storage system, the system comprising:

an asynchronous mirroring driver resident in the local storage system for intercepting

I/O transactions to a storage disk of the local storage system, identifying a series of write transactions issued to said storage disk, making a copy of the series of write transactions, and storing said copy in at least one of a series of files that are created on a file-system of the local storage system ~~without requiring a consolidation of the series of write transactions; and~~

a first asynchronous mirroring coordinator resident on the local storage system for invoking a file transfer system to transmit the series of files on the local file-system of the local storage system to a file system of the remote storage system via a non-proprietary network protocol to accommodate an exact reproduction at the remote storage system of the series of write transactions as issued to said storage disk of the local storage system; and

~~a service that sends the series of files to a network to which a remote storage system is connected.~~

2. (Previously Presented) The system claim 1 further comprising:

a second asynchronous mirroring coordinator resident on the remote storage system for detecting the series of files on the file system of the remote storage system, opening the files and reading the copies of the series of write transactions in these files; and

an asynchronous mirroring driver resident on the remote storage system for receiving the copies of the series of write transactions from the second asynchronous mirroring coordinator and issuing the transactions to a remote device connected to the remote storage system which is configured to mirror the local storage device on the local storage system.

3. (Currently Amended) A method for mirroring write operations from a local storage system to a remote storage system, the method comprising the steps of:

intercepting I/O transactions to a storage disk of the local storage system;

identifying a series of write transactions to said storage disk from the intercepted I/O transactions;

~~making a copy of the series of write transactions;~~

storing ~~said copy~~ a copy of the series of write transactions in at least one of a series of files that are created on a ~~local~~ file-system of the local storage system without requiring a consolidation of the series of write transactions;

~~transmitting invoking a file transfer system to transmit, via a non proprietary network protocol, the series of files from the local file-system of the local storage system to a network to which the remote storage system is connected~~ through an Internet connection to accommodate a reproduction at the remote storage system of the series of write transactions as issued to said storage disk of the local storage system; and

~~writing data respectively corresponding to the series of write transactions to the storage device of the remote storage system.~~

4. (Previously Presented) The method of claim 3, further comprising:

passing the series of write transactions to a driver issuing the transactions to storage device of the remote storage system, which is configured to mirror the storage device on the local storage system.

5. (Currently Amended) A computer program product for mirroring write operations from a local storage system to a remote storage system, the computer program product comprising:

an asynchronous mirroring driver software module for intercepting I/O transactions to a storage disk of the local storage system, identifying a series of write transactions issued to said storage disk, making a copy of the series of write transactions, and storing said copy in at least one of a series of files that are created on a file-system of the local storage system; and

a first asynchronous mirroring coordinator software module for invoking a configured file transfer system to transmit the series of files ~~it finds on the file system of the local storage system~~ to a file system on the remote storage system via a non-proprietary network protocol to accommodate an exact reproduction at the remote storage system of the series of write transactions as issued to said storage disk of the local storage system; ~~and~~

~~a service that sends the series of files to a remote storage system is connected by a network.~~

6. (Previously Presented) The computer program product of claim 5 further comprising:

a second asynchronous mirroring coordinator software module installed on the remote storage system for detecting the series of files on the file system of the remote storage system, opening the files and reading the copies of the series of write transactions in these files, and issuing the copies of the series of write

transactions to a storage device connected to the remote storage system that is configured to mirror the storage device on the local storage system.

7. (Previously Presented) The system of claim 1, wherein individual ones of the series of files comprise:

a Header portion that includes information on the total size of the file;
an I/O Control Block portion which indicates address offsets where each transaction in the file is to be stored on the remotely located destination storage system, and which further indicates the size of the data for each transaction; and
a Data portion which contains the data for each transaction in the file.

8. (Previously Presented) The system of claim 7, wherein the Header portion further includes:

a pointer to the I/O Control Block portion which indicates the offset where the I/O Control Block portion of the file begins; and
a pointer to the Data portion, which indicates the offset where the Data portion of the file begins.

9. (Previously Presented) The system of claim 1, wherein the asynchronous mirroring driver intercepts all I/O transactions in the system.

10. (Original) The method of claim 3, wherein intercepting I/O transactions comprises intercepting all I/O transactions in the system.

11. (Previously Presented) The computer program product of claim 5, wherein the asynchronous mirroring driver module intercepts all I/O transactions in the system.

12-17. (Previously cancelled).

18. (Previously Presented) The system of claim 1, wherein the asynchronous mirroring driver intercepts a transaction affecting the content or organization of a disk.
19. (Original) The method of claim 3, wherein intercepting I/O transactions comprises intercepting a transaction affecting the content or organization of a disk.
20. (Previously Presented) The computer program product of claim 1, wherein the asynchronous mirroring driver module intercepts a transaction affecting the content or organization of a disk.
21. (Previously Presented) The system of claim 1, wherein the series of write transactions is one of a plurality of series of I/O transactions that are respectively retained in corresponding ones of the series of files, and individual ones of the series of files include pointers to accommodate sequencing the series of files, whereby a transaction level record of changes to the storage disk of the local storage system is provided for the remote storage system.
22. (Previously Presented) The system of claim 21, wherein the plurality of series of I/O transactions include at least one formatting transaction and/or at least one partitioning transaction.
23. (Previously Presented) The method of claim 3, wherein the series of write transactions is one of a plurality of series of I/O transactions that are respectively retained in corresponding ones of the series of files, and individual ones of the series of files include pointers to accommodate sequencing the series of files, whereby a transaction level record of changes to the storage disk of the local storage system is provided for the remote storage system.
24. (Previously Presented) The method of claim 23, wherein the plurality of series of I/O transactions include at least one formatting transaction and/or at least one partitioning transaction.

25. (Previously Presented) The computer program product of claim 5, wherein the series of write transactions is one of a plurality of series of I/O transactions that are respectively retained in corresponding ones of the series of files, and individual ones of the series of files include pointers to accommodate sequencing the series of files, whereby a transaction level record of changes to the storage disk of the local storage system is provided for the remote storage system.

26. (Previously Presented) The computer program product of claim 25, wherein the plurality of series of I/O transactions include at least one formatting transaction and/or at least one partitioning transaction.